


JAN 29 1969

APOLLO PROGRAM DIRECTIVE NO. 19A

TO : DISTRIBUTION

FROM:


Sam C. Phillips
Lt. General, USAF
APOLLO PROGRAM DIRECTOR

SUBJECT : Apollo Mission Evaluation Reporting Requirements

OFFICE OF PRIME RESPONSIBILITY: Apollo Test (MAT)

- REFERENCES:
- (a) Apollo Test Requirements, NHB 8080.1
 - (b) Apollo Reliability and Quality Assurance Program Plan, NHB 5300.1A
 - (c) Apollo Program Directive No. 44
 - (d) Apollo Program Directive No. 8A
 - (e) Apollo Program Directive No. 7
 - (f) Apollo Mission Failure Contingency Plan

I. PURPOSE

This Directive establishes Apollo Mission Evaluation Reporting Requirements to ensure that maximum and timely post flight information is available to Apollo Program/Project Offices for use in follow-on mission preparation.

II. SCOPE

The Apollo Mission Evaluation Reporting Requirements described herein cover:

- A. Mission evaluation plans, reports, meetings and reviews.
- B. Identification of all space vehicle and launch active ground support equipment failures and anomalies.
- C. Determination of the cause of failures and anomalies, their close-out, corrective actions for subsequent missions, and impact on the Apollo Program.

III. PLANNING AND REPORTING REQUIREMENTS

Mission evaluation planning and reporting shall be accomplished by the Apollo Program Office (APO) and the centers (MSFC, MSC, KSC) in accordance with the general requirements in references (a) and (b). The following paragraphs summarize these requirements and identify the minimum plan and report contents as well as responsibilities for the contents:

A. Mission Evaluation Plans (KSC, MSFC, MSC)

Evaluation plans for each mission or block of missions will be prepared and submitted to the Apollo Program Director prior to the mission. These plans will include as a minimum:

1. Mission evaluation organization, reporting, and review requirements outlined in this directive.
2. Mission evaluation meeting schedules (including flight crew debriefing meetings) agenda, and coordination responsibilities.
3. Procedures for failure and anomaly closeout.
4. Intercenter coordination plan and responsibilities.

B. Reporting Requirements1. Daily Operations Reports (APO)

The Mission Director will issue Daily Operations Reports throughout the mission. At the request of the Mission Director, or his designated representative, KSC, MSFC, and MSC will provide the necessary information to support the preparation of these reports. The Daily Operations Reports will summarize mission progress, accomplishments, events, and systems performance including failures and anomalies occurring during the previous twenty-four hour period.

2. Mission Director's Summary Report (APO)

The Mission Director will issue a Summary Report within twenty-four hours after mission termination. The objective of this report is to provide management with a "quick look" summary of overall mission results and the specific content will be determined by the Mission Director. At the request of the Mission Director, or his designated representative, KSC, MSFC, and MSC will provide the necessary information to support the preparation of this report. In general, the Summary Report will summarize the mission in terms of primary and detailed test objectives accomplished, mission events, achievements and systems performance including failures and anomalies.

3. Five Day Reports (KSC, MSFC, MSC)

The Centers will supply a report to the Apollo Program Director within five calendar days after mission termination. The reports will contain the following information:

a. KSC Reports

Summary of space vehicle and all active ground support equipment countdown failures and anomalies, failure investigation results, corrective actions/closures, initial post launch pad damage evaluation, and data retrieval status.

b. MSFC Reports

Report of the degree to which launch vehicle objectives have been satisfied, major launch vehicle trajectory results including comparisons with predicted conditions, launch vehicle failures and anomalies, failure investigation results and corrective actions/closures.

c. MSC Reports

Report of the degree to which spacecraft objectives have been satisfied, major spacecraft trajectory results including comparison with predicted conditions, spacecraft failures and anomalies, failure investigation results, corrective actions/closures.

4. Failure and Anomalies Listing Report (KSC, MSFC, MSC)

Within 30 calendar days after launch, KSC and MSFC will provide to the Apollo Program Director a concise but complete report applicable to Center design responsibilities, of all significant flight, launch complex, and launch active GSE failures and anomalies. In the case of MSC, a similar listing is due 30 calendar days after mission termination. As a minimum requirement the listing will include the following:

- a. Description of the failure or anomaly, the time in the mission when it occurred, the possible mode or cause and the results of failure analysis, if available.
- b. Criticality of the failure or anomaly, the degree to which it compromised a primary or secondary mission objective and the impact on subsequent missions. Criticality categories of nonconformance are described in reference (c).

- c. Identification of any testing required in support of corrective action, the schedule for the testing, and whether it is a constraint on following missions.
- d. Corrective action to be undertaken: this will include identification of required redesign and/or modification, revisions to the qualification or certification testing or checkout activities; mission effectivity of any changes and a statement as to whether the failure or anomaly is considered resolved or open. Anticipated closeout dates for failure and anomaly corrective actions should be identified when practicable.

The above report will be used as a baseline for failure and anomaly tracking and closeout. It should be updated and included as the failure and anomaly section of the Final Mission Evaluation Report and the Ground Systems Evaluation Report identified in III.B.5 and III.B.6 below. Additional updates will be transmitted to the Apollo Program Director until all significant failures and anomalies are closed.

5. Final Mission Evaluation Report (MSFC, MSC)

Final Mission Evaluation Reports will be submitted to the Apollo Program Director within 60 calendar days after mission termination. As applicable to each Center, the reports will include detailed coverage of the following:

- a. Identification of spacecraft and launch vehicle configuration, mission trajectory, and sequential events.
- b. Results and analysis of spacecraft and launch vehicle system and subsystem performance.
- c. Results and analysis of MSFN command tracking, communications, and data acquisition performance.
- d. Results and analysis of Center active GSE performance.
- e. Evaluation of atmospheric conditions during final countdown and early launch phase.
- f. Apollo experiments results.
- g. Recovery operations.
- h. A separate failure and anomaly summary section as outlined in paragraph III.B.4.

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6. Ground Systems Evaluation Report (KSC)

A Ground Systems Evaluation Report will be prepared by KSC and submitted to the Apollo Program Director within 60 calendar days after mission termination. The report will include:

- a. A chronological summary of major KSC flow events leading to the launch.
- b. Atmospheric conditions during final countdown and launch.
- c. Center active GSE performance and condition for next flight.
- d. A separate failure and anomaly summary section as outlined in paragraph III.B.4.

7. FRR and DCR Documentation

For the subsequent Flight Readiness Review (FRR) and where applicable for Design Certification Reviews (DCR), the updated failure and anomalies identified in III.B.4 are to be submitted as part of the FRR and DCR documentation and presented as part of the oral presentations at the Apollo Program Director's FRR. FRR and DCR documentation and presentation requirements are established by references (d) and (e).

IV. FLIGHT EVALUATION MEETINGS (MSC, MSFC)

The Centers will conduct flight evaluation meetings after each mission for Center and inter-Center coordination purposes and to support the reporting, review, and presentation requirements outlined in this directive. Flight crew debriefing meetings will be scheduled by the MSC Director of Flight Crew Operations. The APO and the other Centers will be notified of these meetings to allow appropriate participation.

V. FLIGHT EVALUATION PRESENTATION TO THE MANAGEMENT COUNCIL

Preliminary results of each mission are to be summarized by Center Program Office representatives at the Management Council Meeting following the mission.

VI. CONTINGENCY PLAN

In the event of premature or unsuccessful termination of an Apollo Mission the requirements for security, investigation procedures, data handling, and reporting will be those established in reference (f).

VII. ACTION

This Directive shall be implemented immediately for reporting the results of Apollo flights and to ensure that identification of mission failures and anomalies and suitable corrective actions have been taken.

VIII. DEFINITIONS

The following definitions shall apply to this Directive:

A. Failure

The inability of a system, subsystem, and/or hardware to perform its required function.

B. Anomaly

Any deviation of system, subsystem, and/or hardware performance beyond previously established limits.

C. Significant Failure or Anomaly

Any failure or anomaly which creates or could create a hazardous situation or condition; results or could result in a launch delay or endanger the accomplishment of a primary or secondary mission objective; would indicate a serious design deficiency; or could have serious impact on future missions.

UNITED STATES GOVERNMENT

STD-L-B-1 INFO PURPOSES ONLY

AP-10

Memorandum

TO : Distribution

DATE: MAR 3 1969

FROM : Apollo Program Manager, AP

SUBJECT: APD #19A, "Apollo Mission Evaluation Reporting Requirements"

Reference: Briefing Note to Dr. Debus from AP, dated February 25, 1969, subject as above, with attachment: APD #19A, "Apollo Mission Evaluation Reporting Requirements"

1. APD #19A has been reviewed by AP. The KSC impact is summarized in the reference, see attached copy.
2. No new compliance actions by KSC appear necessary other than the revision of K-AS-04, "Apollo/Saturn Post Launch Reports Plan," which is currently in progress. APD #19A is forwarded for your information only.
3. Comments you may have pertinent to the present KSC posture in regard to APD #19A should be directed to the Chief, AP-SVO, prior to March 31, 1969.



R. O. Middleton
Rear Admiral, U. S. Navy

Attachment: As stated

Distribution:
STD-L-B

cc:
Dr. Debus, CD
Mr. Murphy, EX

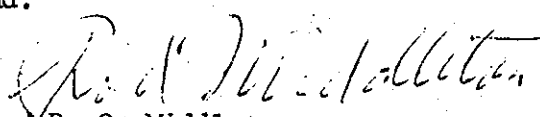


FEB 25 1969

BRIEFING NOTE TO: Dr. Debus

SUBJECT: APD #19A, "Apollo Mission Evaluation Reporting Requirements"

1. APD #19A updates APD #19 of June 6, 1966. It describes the post launch reporting requirements of the Mission Director and the MSF Centers. The only significant difference is to change the "Three Day Report" to the "Five Day Report."
2. KSC is required to provide these four reports:
 - a. Daily Operations Reports and the Mission Director's Summary Report. (These reports are prepared by the Mission Director. KSC is required to provide one input, normally within thirty minutes after launch.)
 - b. Five Day Report.
 - c. Failure and Anomalies Listing Report.
 - d. Ground Systems Evaluation Report.
3. Instructions for the implementation of KSC post launch reporting to satisfy the requirements of APD #19A are contained in K-AS-04, "Apollo/Saturn Post Launch Reports Plan." This plan will be revised to change the "Three Day Report" to the "Five Day Report." No additional KSC implementing documentation is deemed necessary.
4. Distribution of this APD will be made to first and second level Directors with an accompanying memorandum requesting notification to my office of any impact they may find.


R. O. Middleton
Rear Admiral, U. S. Navy

Enclosure: APD #19A